VERSION WITH MARKINGS TO SHOW CHANGES

50. (Amended) A DNA analyzing method comprising:

preparing a sample single-stranded DNA fragment from a sample double-stranded DNA fragment in a sample solution,

intercalating an intercalater capable of emitting fluorescence of a given wavelength upon receiving an excitation beam of another given wavelength when it [intercalates into the base pairing nucleotides formed by a conformation of the sample single-stranded DNA fragment in the] is intercalated with nucleotide bases paired from conformation of said single-stranded DNA fragment in said sample solution, wherein a wavelength of the fluorescence emitted from a complex of the intercalater and the sample single-stranded DNA fragment is different from the wavelength emitted from the intercalater per se,

irradiating the excitation beam of the given wavelength onto the complex of the intercalater and the sample single-stranded DNA fragment,

denaturing the conformation of the sample single-stranded DNA fragment in the sample solution under a given denaturing condition while irradiating the excitation beam,

detecting the change in an intensity of the fluorescence of a preset wavelength due to the denaturation of the sample single-stranded DNA fragment,

measuring a melting curve of the conformation of the sample single-stranded DNA fragment to derive melting curve data representing a relation between the given denaturing condition and an obtained denaturing result, and

comparing the measured melting curve data of the sample single-stranded DNA fragment with known melting curve data preliminarily prepared using single-stranded DNA fragments of a known sequence for obtaining sequence information of the sample single-stranded DNA fragment and for analyzing for a DNA polymorphism including a single-base substitution in the sample single-stranded DNA fragment.

51. (Amended) The DNA analyzing method of claim 50, wherein the comparison of the measured melting curve data of the sample single-stranded DNA fragment with the known melting curve data comprises[,]:

comparing the measured melting curve data of the sample single-stranded DNA fragment with a data set of [the] known melting curves or with a data set of curves prepared by linear combination of a plurality of known curve data sets, and

determining that [the] a data set of [the] known melting curve with [a] the least statistical error compared to the measured melting curve data or [the] a linear combination of [the] data sets with [a] the least statistical error compared to the measured melting curve data represents [the] sequence information of the sample single-stranded DNA fragment.

52. (Amended) The DNA analyzing method of claim 50, wherein the comparison of the measured melting curve data of the sample single-stranded DNA fragment with the known melting curve data comprises[,]:

calculating a statistical error between the measured melting curve data and a data set of [the] known melting curves or a data set of [the] curves prepared by linear combination of a plurality of known melting curve data sets, [thereby]

selecting [one] a single curve data [with a] with the least statistical error compared to the measured melting curve data for carrying out the calculation and selection over a remaining data set of [the] known melting curves or a data set of [the] curves prepared by linear combination of a plurality of [the] known melting curves, and

[representing a given number of the curve data sets in the increasing order of the least statistical error as the sequence information of the measured sample single-stranded DNA fragment]

providing curve data sets in order of increasing statistical error compared to the measured melting curve data as sequence information of the measured sample single-stranded DNA fragment.

59. (Amended) The DNA analyzing method according to claim 50,

wherein the comparison of the measured melting curve data of the sample single-stranded DNA fragment with the known melting curve data comprises[,]:

comparing the measured melting curve data of the sample single-stranded DNA fragment with a linear combination of [the] known melting curve data [each preliminarily fitted by a superposition of given functions], and

[determining that a known melting curve data set with a least statistical error is defined as the sequence information of the sample single-stranded DNA fragment]

defining the sequence information of the sample single-stranded DNA fragment as a known melting curve data set with the least statistical error compared to the measured melting curve data.